In the Claims

Kindly amend the claims as shown. Claims remaining in the application are as follows:

1. (Currently Amended): An airflow distribution control system for usage in a raised-floor data center comprising:

an under-floor partition with an adaptively controllable flow resistance, the partition being adapted constructed into a plenum beneath the raised-floor in selected positions; ~~and~~

a sensor communicatively coupled to the partition that detects a parameter indicative of airflow distribution in the data center, tracks the parameter over time, and adaptively controls the flow resistance beneath the raised floor based on the tracked changes in the parameter to balance air flow distribution to match thermal loads imposed by data center equipment;

a plurality of under-floor partitions with controllable flow resistances, the partitions being selectively positioned in the plenum;

a network of distributed sensors communicatively coupled to the plurality of under-floor partitions; and

a controller coupled to the distributed sensor network and the controllable flow resistances, the controller adapted to determine a spatial distribution of at least one parameter sensed by the sensor network, track the determined spatial distribution over time, and automatically control flow resistances in the plurality of partitions mutually independently based on changes in tracked spatial distribution.

2. (Original): The system according to Claim 1 further comprising:

a plurality of adjustable apertures in the under-floor partition; and

a servomotor coupled to the apertures and the sensor, the servomotor responsive to communication from the sensor to control flow resistance of the partition.

3. (Original): The system according to Claim 1 further comprising:

a plurality of louvered shutters in the under-floor partition; and

a servomotor coupled to the louvered shutters and the sensor, the servomotor responsive to communication from the sensor to control flow resistance of the partition.

4. (Previously presented): The system according to Claim 1 further comprising:
a plurality of under-floor partitions with controllable flow resistances constructed into the raised floor, the partitions being selectively positioned in the plenum and independently controllable by the sensor.

5. (Canceled)

6. (Currently Amended): The system according to Claim ~~5~~ 1 wherein:
the plurality of under-floor partitions has adjustable apertures of varying sizes and densities.

7. (Original): The system according to Claim 1 wherein:
the sensor is selected from among a group consisting of airflow sensors, pressure sensors, and temperature sensors.

8. (Currently Amended): An airflow control apparatus for usage in a raised-floor data center comprising:
a partition constructed into and beneath the raised-floor;
a plurality of adjustable apertures in the partition adapted for automatic and dynamic control of airflow resistance under the raised-floor; ~~and~~
a servomotor coupled to the apertures and adapted to dynamically control flow resistance of the partition to adjust air flow distribution under the raised-floor according to dynamic environmental changes within the data center;
a plurality of under-floor partitions with controllable flow resistances, the partitions being selectively positioned in the plenum;
a network of distributed sensors communicatively coupled to the plurality of under-floor partitions; and
a controller coupled to the distributed sensor network and the controllable flow resistances, the controller adapted to determine a spatial distribution of at least one parameter sensed by the sensor network, track the determined

spatial distribution over time, and automatically control flow resistances in the plurality of partitions mutually independently based on changes in tracked spatial distribution.

9. (Currently Amended): The apparatus according to Claim 8 further comprising:
a plurality of louvered shutters in the partition; and
a the controller coupled to the louvered shutter plurality and adapted to dynamically and automatically control the louvered shutters to adjust air flow distribution under the raised-floor.

10. (Original): The apparatus according to Claim 8 further comprising:
a plurality of adjustable apertures of varying sizes and densities in the partition.

11. (Currently Amended): A ventilation system for a data center comprising:
a raised floor overlying a plenum space and further comprising a plurality of tiles;
at least one under-floor partition with a controllable flow resistance, the partitions being constructed into the raised floor in the plenum beneath the raised floor; ~~and~~
at least one sensor communicatively coupled to the at least one partition, the at least one sensor that detect a parameter indicative of airflow distribution in the data center and dynamically control the flow resistance beneath the raised-floor based on the parameter to balance air flow distribution to track and adjust to variations in thermal loads imposed by data center equipment;
a network of distributed sensors communicatively coupled to the plurality of under-floor partitions, the sensor network that automatically and dynamically controls the plurality of partitions mutually independently to determine a spatial distribution of at least one parameter sensed by the sensor network, track the determined spatial distribution over time, automatically control flow resistances in the plurality of partitions mutually independently based on changes in tracked spatial distribution, and adjust to dynamic changes in thermal loads imposed by data center equipment.

12. (Previously presented): The system according to Claim 11 wherein:
the plurality of raised floor tiles include solid tiles and perforated tiles selectively arranged to manage airflow.

13. (Previously presented): The system according to Claim 11 further comprising:
at least one air conditioning unit arranged to inject cooling air into the plenum; and
a plurality of under-floor partitions constructed into the raised floor and arranged in a series so that partitions with higher flow resistance are positioned generally more proximal to the air conditioning unit and partitions with lower flow resistance are positioned generally more distal to the air conditioning unit.

14. (Previously presented): The system according to Claim 11 further comprising:
a plurality of under-floor partitions constructed into the raised floor and arranged in a selected pattern wherein ones of the partitions have flow resistance that is dynamically controllable independently of other partitions.

15. (Previously presented): The system according to Claim 11 further comprising:
a plurality of adjustable apertures in ones of the at least one under-floor partition; and
a servomotor coupled to the apertures and the sensor, the servomotor being responsive to communication from the sensor to dynamically control flow resistance beneath the raised floor.

16. (Previously presented): The system according to Claim 11 further comprising:
a plurality of louvered shutters in ones of the at least one under-floor partition; and
a servomotor coupled to the louvered shutters and the sensor, the servomotor responsive to communication from the sensor to control flow resistance beneath the raised floor.

17. (Canceled):

18. (Original): The system according to Claim 11 wherein:
at least one under-floor partitions has adjustable apertures of varying sizes and densities.

19. (Original): The system according to Claim 11 wherein:

the sensor is selected from among a group consisting of airflow sensors, pressure sensors, and temperature sensors.

~~20. - 27.~~ (Canceled)

28. (Currently Amended): An airflow control apparatus for usage in a raised-floor data center comprising:

means distributed in an under-floor plenum for dynamically sensing and tracking over time a parameter indicative of airflow distribution in the data center; ~~and~~

means distributed in the underfloor plenum for dynamically adjusting flow resistance distribution in a plenum under the raised floor based on the sensed parameter to balance air flow distribution to dynamically and automatically adjust to changes in thermal loads imposed by data center equipment;

means coupled to the dynamically sensing and tracking means and the dynamically adjusting means for determining a spatial distribution of at least one parameter sensed by the sensor network, tracking the determined spatial distribution over time, and automatically controlling flow resistances mutually independently based on changes in tracked spatial distribution.

29. (Currently Amended): A cooling system for usage in a raised-floor data center comprising:

at least one Computer-Room Air Conditioning (CRAC) unit configured to supply cooling fluid to equipment in the data center;

a under-floor plenum in fluid communication with the at least one CRAC unit;

at least one under-floor partition constructed ~~to~~ into and under the data center raised-floor in selected positions, the partition further comprising a controllable flow resistance distributed over the at least one under-floor partition;

a ~~plurality~~ network of sensors distributed in the data center and adapted to track variations in airflow distribution in the data center over time; and

a controller coupled to the distributed controllable flow resistance and the distributed sensor ~~plurality~~ network, the controller adapted to determine a spatial distribution of at least one parameter sensed by the sensor network, track the determined spatial distribution over time, automatically control flow

resistances in the plurality of partitions mutually independently based on changes in tracked spatial distribution, and balance air flow distribution to adjust to changes in thermal loads imposed by the data center equipment over time.

30. (Previously presented): The cooling system according to Claim 29 further comprising:

the controllable flow resistance, the sensor plurality, and the controller configured to dynamically detect and respond to variations in thermal conditions resulting from presence of personnel in the data center, and addition, removal, and failure of data center equipment units.

31. (Previously presented): The cooling system according to Claim 29 further comprising:

the controller adapted to dynamically increase airflow to a region of the data center with a detected high thermal load and to dynamically decrease airflow to a region of the data center with a detected low thermal load.

32. (Previously presented): The cooling system according to Claim 29 further comprising:

the controllable flow resistance and the controller adapted to control the controllable flow resistance dynamically and independently for particular partitions and for particular segments of partitions.

33. (Previously presented): The cooling system according to Claim 29 further comprising:

the sensor plurality selectively distributed spatially in the data center and the controller adapted to account for the sensor plurality spatial distribution to determine an airflow spatial distribution.

34. (Previously presented): The cooling system according to Claim 29 further comprising:

the controllable flow resistance, the sensor plurality, and the controller configured to dynamically detect and respond to variations in thermal conditions resulting from intrusions into the under-floor plenum.

35. (Previously presented): The cooling system according to Claim 29 further comprising:

the sensor plurality are selectively distributed including zero or more airflow sensors, zero or more pressure sensors, and zero or more temperature sensors.